

Work Order ID 157169

Thursday, February 16, 2017 9:03:53 AM

157169

Ship March 27th

Page 1

Item ID: D350-591-113

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Heli-Access Step, Short, High Gear

Start Date: 2/16/2017 Start Qty: 7.00

Required Date: 3/27/2017 Req'd Qty: 7.00

7
7 4/ DAS 21 9-89

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: MF

Date: 17-2-16 Tooling:

Date:

QC:

Date: SPC (Y/N):

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2310

D

DSI 9525

A

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D350-591-113 CHG005

4X SmB 17/3/29
MAR 28 2017

DAS 21 9-89
USB MAR 29 2017

110

0.00

110

Large Fab

Large Fab

Memo

0.35

1-Cut D2244 extrusion to 62.00" long as per Dwg D2310
2-Drill extrusion as per Dwg D2310 using drill jig DT8230
3-Debur

BE 17-03-07

BE 17-03-07

B# 157169 x4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Thursday, February 16, 2017 9:03:53 AM

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[illegible]

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WORK ORDER NON-CONFORMANCE / UPDATE

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Item ID: D350-591-113

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Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Heli-Access Step, Short, High Gear

Start Date: 2/16/2017 Start Qty: 7.00

7

Cust Item ID:

Required Date: 3/27/2017 Req'd Qty: 7.00

7

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Large Fab	0.00							DAS 24 9-89
130	Large Fab								
Large Fab	Memo	0.33							
Large Fab	1-Weld Fwd end cap and bushing as per Dwg D2310								
	A/R AL ROD Batch: 13478B								
	2-Grind end cap and bottom bushing welds flush								
132	Manufacture as per dwg	0.00							
132	Mill Conv	0.00							
Conventional Milling Machine	Machine top weld on bushing flush as per dwg								
140	QC9- Inspect visual per QSI004- Fusion Welds	0.00							DAS 9 9-89
140	QC	0.00							
Quality Control	Memo								

4 good

3 SCRAP

MAR 21 2017

3/17/03/23

17-3-23

4

④ 17-03-24

DQA:

Date: 2017-05-25



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date MAY 16 2017

Work Order update only

Work Order: 157169		DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. D 350-591-113		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
NCR No. 17-6417		Scrap ☒		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
		Suspected Unapproved ☐		Large Fab ☒	Composite ☐	Supplier ☐			
Date: 17-03-22		Step #: 130		QTY Effective: 3			MRB (QS1042) Approval		
							9-89 17-03-22		
Description Work Order Deviation				Disposition				Completed By	
too much material was remove when grinding bottom section of bushing. Operator had trouble with pinholes when welding, and in the process of repairing the pinholes he was not paying attention to is grinding, therefore, the bottom section of step had inconsistency in the material. R.C. operator in experience				Scrap + destroy qty 3 no replace Operator employee is to stop doing any grinding on production parts and practice is grinding on non-production parts until he's supervisor is comfortable with is ability to operate a grinder this training is to be recorded in is training log as an update training and sign off by is supervisor				C'S MAR 21 2017	
								Lead hand / Supervisor	
								DAS Approval Verification	
								24	
								9-89	
								MAR 21 2017	
								QC / QA Coordinator	
								DAS Approval	
								9-89	
								17-03-22	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☒	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☒	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☒	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Cut Too Short ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Instructions Incomplete/Unclear ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Drill Holes ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Misaligned/off center ☐		Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER: <i>modifying</i>							

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Setup Start *NS1*

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Stop *NS2*

Item Name: Heli-Access Step, Short, High Gear

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Required Date: 3/27/2017 Req'd Qty: 7.00 *7*

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC5- Inspect part completeness to step on W/O	0.00							DAS
150						(4)	17.03.24		9
QC	Memo	0.02							9-89
Quality Control									
160	Chemical Conversion Coat per QSI005 4.1	0.00							
160									
HandFinish	Memo	0.35							
Hand Finishing									
170		0.00							
170	Large Fab								DAS
Large Fab	Memo	0.33							43
Large Fab	1-Rivet as per Dwg D2310 2-Inspect for foreign object as per QSI 024 3-Weld Aft end cap as per Dwg D2310 A/R AL ROD Batch: _____ 4-Grind end cap welds flush								9-89

MAR 26 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Skid-tube ☐</td> <td style="width:12.5%;">Cross tube ☐</td> <td style="width:12.5%;">Water Jet ☐</td> <td style="width:12.5%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																							
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Root Cause		FAULT CATEGORY			
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OTHER : ☐					

Work Order ID 157169

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Item ID: D350-591-113 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Heli-Access Step, Short, High Gear
Start Date: 2/16/2017 Start Qty: 7.00 ***7*** Cust Item ID:
Required Date: 3/27/2017 Req'd Qty: 7.00 ***7*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
210	<i>M 136657</i>					<i>4</i>	<i>0</i>	<i>1703.27</i>	<i>DAS 34 38</i>
Powdercoat	Memo	0.13							
Powder Coating	START TIME: <i>12:00</i>								
	OVEN TEMPERATURE: <i>300°</i>								
	FINISH TIME: <i>12:30</i>								
220	Wing Walk as per dwg QSI005 4.4 Batch <i>M137092</i>	0.00							
220									
HandFinish	Memo	0.19							
Hand Finishing	***Install Dart labels after wing walk***								<i>2017/03/27</i> <i>BEB</i>
230	QC3- Inspect Part Finish	0.00							
230									
QC	Memo	0.01							
Quality Control	***Install Dart labels after wing walk***					<i>4</i>			<i>DAS 38 38</i> <i>MAR 28 2017</i>

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Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 157169***157169***

Page 8

Item ID: D350-591-113

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Heli-Access Step, Short, High Gear

Start Date: 2/16/2017 Start Qty: 7.00

7

Cust Item ID:

Required Date: 3/27/2017 Req'd Qty: 7.00

7

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

QC21- Final Inspection - Work Order Release

0.00

270

QC

Memo

0.12

DAS
21
9-89

MAR 29 2017

Quality Control

MAR 29 2017

DAS
21
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

Thursday, February 16, 2017 9:03:53 AM

Page 1

Work Order ID: 157169

157169

Parent Item: D350-591-113

D350-591-113

Parent Item Name: Heli-Access Step, Short, High Gear

Start Date: 2/16/2017

Required Date: 3/27/2017

Start Qty: 7.00

Required Qty: 7.00

Comments: IPP Rev:H04.11.09ReformatKJ/JLM
ECN10-586 10.06.18 DD verf:EC

IPP Rev:E as per

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

✓ D2244-116 *D2244-116* Step Extrusion		Manufactured	No			110	Each	94.0000	1	7			
---	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

**

Location	Loc Qty	Loc Code
----------	---------	----------

WA003	94	
150064	94	
XXXXX	0.0000368	

✓ D2275 *D2275* Bushing		Manufactured	No			130	Each	19.0000	1	7			
--------------------------------------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

**

Location	Loc Qty	Loc Code
----------	---------	----------

WA003	19	
154822	19	

✓ D2582 *D2582* Hi-Skid Step Leg Assembly		Manufactured	No			170	Each	11.0000	1	7			
--	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

**

Location	Loc Qty	Loc Code
----------	---------	----------

WA003	11	
152238	4	
155534	5	
156541	2	

DAS
24
9-89

MAR 24 2017

B158046 → 4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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			OTHER : _____																																																																		

Picklist Print

Thursday, February 16, 2017 9:03:53 AM

Work Order ID: 157169

157169

Parent Item: D350-591-113

D350-591-113

Parent Item Name: Heli-Access Step, Short, High Gear

Start Date: 2/16/2017

Required Date: 3/27/2017

Start Qty: 7.00

Required Qty: 7.00

D2673-34

Manufactured No

130

Each

28.0000

2

14

✓ ***D2673-34***

End Plate

**

17-3-6

Location

Loc Qty

Loc Code

WA003

28

151793

2

152320

24

155298

2

VF

K591-113

Manufactured No

240

Each

11.0000

1

7

K591-113

Short Step Installation

**

DAS
27
9-89

Location

Loc Qty

Loc Code

FG125

4

153371

4

FG128

7

155866

7

4

DAS
28
9-89

MS20600-AD4W3

Purchased

No

170

Each

464.0000

16

112

✓ ***MS20600-AD4W3***

Cherry Rivet

**

MAR 24 2017

DAS
24
9-89

Location

Loc Qty

Loc Code

ST308

196

m135603

196

WA003

268

m136648

268

64

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
11				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
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OTHER : _____					



DESIGN KE	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2310	REV. D SHEET 1 OF 2
DATE 05.11.14		TITLE HIGH SHORT STEP ASSEMBLY	SCALE NTS
A	94.11.10	NEW ISSUE	
B	97.05.22	END CAPS CHANGED	
C	97.07.23	ADDED BUSHING AND FACING INFO	
D	05.11.14	UPDATE FINISHING NOTE	

D2310 HIGH SHORT STEP ASSEMBLY PARTS LIST

Part No.	Description	QTY
D2310	High Short Step Assembly	X
D2244-62.0	STEP EXTRUSION*	1
D2275	BUSHING	1
D2582	STEP LEG ASSEMBLY	1
D2673-34	STEP END PLATE	2
MS20600AD4W3	Rivets	16

*cut per drawing

mf
#157169

RELEASED
05.11.28

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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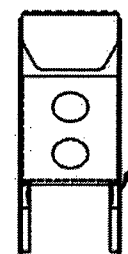
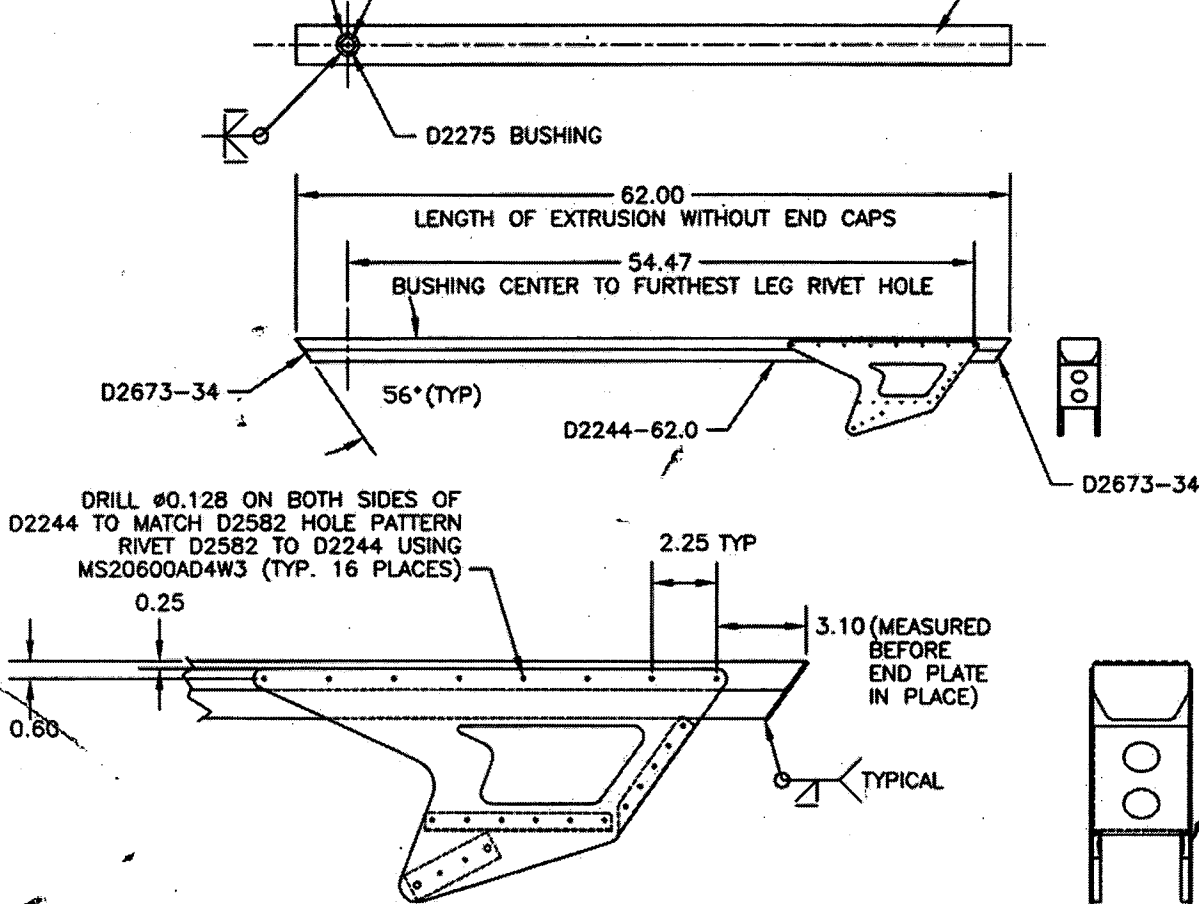
DART

DESIGN	KE	DRAWN BY	PH	DART AEROSPACE LTD
CHECKED		APPROVED		HAWKESBURY, ONTARIO, CANADA
DATE	05.11.14	DRAWING NO.	D2310	REV. D
		TITLE	HIGH SHORT STEP ASSEMBLY	SHEET 2 OF 2
		SCALE	NTS	

FACE TOP OF STEP ON CENTER WITH BUSHING USING $\phi 1.875$ FACING TOOL FACE TO REMOVE RIDGES ON EXTRUSION

DRILL HOLE THROUGH EXTRUSION TO FIT $\phi 1.25$ BUSHING WELD BUSHING INTO HOLE WITH COUNTER BORE FACING UP

BLACK ANTI-SKID TOP SURFACE TO BOTTOM OF TOP RADIUS



STEP LEG DETAIL

D2310 HIGH SHORT STEP ASSEMBLY

- 1) MAKE FROM D2244 STEP EXTRUSION
- 2) WELD PER DART QSI 004
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT ASSEMBLY WHITE (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

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RELEASED
05-4-28-4

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

Closed: _____ Date: _____

Work Order update only ☐

Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					